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The History of the Diagnosis and Treatment of Empyema.

By F. G. CHANDLER, M.D.

(I) AMONG SAVAGE PEOPLES.

THE operation of *paracentesis thoracis* is not unknown even among uncivilized peoples, and William Mariner, writing in 1817,[1] described the operation among the inhabitants of the Tonga Islands for penetrating arrow wounds of the chest. It is possible that the procedure of paracentesis may have followed the migrations of circumcision and trephining, and their surgery may be drawn from a higher cultural stage than their own. Mariner described how the natives made an incision with a sharp piece of bamboo over the arrow wound; this was cautiously continued with a splinter of shell, the intercostal muscles and pleura were incised, and the arrow head removed with the finger. The patient was then placed on the wounded side, supported beneath the shoulder and pelvis, and made to hold his breath and breathe deeply, so that much blood was discharged. A banana leaf folded and smeared with oil was inserted as a drain.

(II) IN THE HIPPOCRATIC COLLECTION.

There are at least seventy references to empyema, and an excellent and clear account of its ætiology, diagnosis and treatment in the so-called "Hippocratic writings." These works do not differentiate between acute serous effusion and empyema, and the failure to do so was a source of fatal error for centuries, since it resulted in the belief that purulent effusions, like those of a serous character, could be absorbed spontaneously. But such diseases as phthisis, abscess of the lung and hydrothorax, were clearly distinguished from empyema in this period. The causes of empyema are given as follows :—

(1) Pneumonia—ii, 155; vi, 159; § 12, &c., &c.
(2) Pleurisy—iv, 535 (Aph. v, 8), &c., &c.
(3) A defluxion from the head—vi, 161, § 13.
(4) A ruptured vessel—vi, 163, § 14.
(5) Abscess of lung—vi, 173.
(6) Wounds and injuries—iv, 219, § 50, &c.

[1] "An Account of the Natives of the Tonga Islands," London, 1817.

[2] The numbers refer to Littré's ed., Paris, 1839, 10 vols.

The diagnosis depended on :—

(*a*) *The History*—e.g., if fever persisted after an attack of pneumonia, or if a pleuritic affection persisted after fourteen days (Aph. v, 8), it was suggestive of empyema.

(*b*) *Symptoms.*—Fever, slightly day, increased at night. Sweats. Cough, with scanty expectoration, except when the empyema was actually coughed up. Sunken eyes. Flushed cheeks. Curved finger nails. Swollen feet. Anorexia. Small blisters over the body. Pain and heaviness of the affected side, inability to lie on the healthy side, and later frequent rigors and wasting.

(*c*) *Physical Signs.*—The noise obtained by shaking the patient and placing the ear to his chest. Bulging of the side. Local redness or swelling. The position adopted by the patient. The point of maximum pain, and a sign which I will call the damp earth sign, which is described by Hippocrates as follows: "Take Eretrian earth, damp, warm and well pounded, soak a piece of linen lightly with it and wrap it around the chest. The place on the linen which dries up first indicates the place for the incision or the cautery." If preferred the earth could be placed directly on the chest.[1] This sign is mentioned later by Celsus and Avicenna.

The treatment was carried out by drugs, vapours, poultices and operation: "When one has reached the fifteenth day after the rupture, one washes the patient with much warm water, and then sits him on a firm seat which will not rock, an assistant holds his arms, and you, shaking him by the shoulders, listen to hear on which side the noise can be detected. One would rather make the incision on the left side, for there the danger is least. If by reason of the density and the quantity of the fluid no noise is heard, which often happens, you should make the incision on the side where there is swelling and the maximum pain, and as low as possible, rather behind the swelling than in front, in order that the flowing of the pus may be facilitated. You should incise between the ribs with a pointed bistouri, which is surrounded by linen almost up to the point, leaving free about as much as the length of the thumb-nail, then you should thrust in the instrument. Having let run off as much pus as you think advisable, you put in a tent of compressed flax, which you attach by a thread. You should let out the pus once a day. On the tenth day, having got rid of all the pus, you should put in a piece of linen as a tent and you should inject wine and warm oil through a cannula, in order that the lung, accustomed to be bathed by the pus, may not become dry all at once. You should draw off the morning's injection in the evening, and the evening's injection in the morning. When the pus becomes thin as water and viscous to the touch and in small quantity, you should insert a tente of hollow tin. The cavity being completely dried up, you should cut the sound little by little and cauterise the wound when you take out the sound altogether." [2]

Another method of operation was to cut down on to the third rib from the last and trepan the rib itself, while a third was to enter the chest by cautery.

As regards prognosis we find: "If the pus is white and pure and contains blood fibres, there is a great chance of recovery. But if the pus on the first day flows like the yolk of an egg or the next day is thick, yellowish, or fetid, the patient will die after the evacuation of the pus" (Aphor. vii, 44). "If the water or pus flow rapidly all at once it will certainly prove fatal" (Aphor. vi, 27). Here is the origin of an erroneous belief which was held tenaciously until the beginning of the nineteenth century.

[1] Littré VII, p. 143, "On Diseases," iii, § 16.
[2] Littré, VII, p. 69, "On Diseases," ii, § 47.

(III) Later Greek Writers and Arabians.

The Hippocratic writings recognized empyema as a common disease and clearly describe an operative treatment which was both efficient and aseptic. From the later pre-Christian centuries we have few extant medical works. A notable feature of what have survived is that the knowledge of the ætiology of empyema degenerates, its frequency seems unrecognized, and the symptoms and physical signs given are not pathognomonic. Soon only the old-standing pointing or ruptured empyema was recognized and treated. For this the lack of widespread medical education, the encumbrance caused by false theories, and the divorce of medicine from surgery, may be held responsible.

About the time of the birth of Christ, in the reign of Augustus Cæsar, lived Celsus. His writings show how far from that of Hippocrates the knowledge of empyema had fallen. It is only under the heading of "fracture of the ribs" that he gives an adequate account of the diagnosis or treatment of empyema. The former was made by noting swelling of the side, or pointing of the pus, or by the damp earth sign: he recommends that the whole side should be smeared with damp Cimolian chalk, the part that remained damp longest indicating the position of the pus. This, I think, is an error due probably to corruption of the text, for it will be seen later that Avicenna, like Hippocrates, says that is the place that dries soonest. His treatment was by bleeding, fasting, and external applications. He continues: "If suppuration gains the upper hand and cannot be dispersed by the methods given above, then the matter becomes urgent, and any delay must be avoided. On the side where there is the greatest swelling a hot iron must be pushed in until it reaches the pus and the matter drawn off."[1] If there is no pointing, the perforation must be made where the Cimolian chalk keeps damp. If the disease is more widespread, the perforation should be made in two or three places.

Dioscorides, physician to Nero, Galen, physician to Marcus Aurelius, Aretaeus, and Oribasius, physician to Julian, add no more.

The Arabians did more harm than good in their treatment of this subject by perpetuating the Galenic instead of the Hippocratic tradition.

(IV) The Middle Ages in the West.

The great surgical revival of the thirteenth century saw the stand against the baneful belief in the necessity of suppuration and "laudable pus" in operation wounds made by Theodoric Borgononi, Bishop of Cervia (1205-96) and his pupil Henri de Mondeville. In spite of them, however, and contrary, perhaps, to the teaching of Hippocrates, this doctrine became firmly and fatally established, and, though later Paracelsus raised his voice against the doctrine, it was held tenaciously until the days of Pasteur and of Lister, as was the idea that pus could be absorbed. Little enough, it is true, was known about empyema in this period, but there was a considerable advance upon the teaching of the Arabians. Roland, Lanfranc, and Henry of Mondeville give an account of the treatment, but, as a rule, the indication for operation was the rupture of the pus externally. Roland[2] describes the treatment of empyemata resulting from a sword wound of the chest: An incision was to be made between rib and rib and a wedge inserted to give free access to the pus. Henri de Mondeville (born in 1306) discussed empyema at some length, but treats only

[1] Celsus, Book VIII, chap. ix, "De costis fractis."

[2] Lib. III, cap. xxv, "De vulneribus thoracis."

one that has ruptured, describing the old method. A fistula having formed, honey, myrrh, sage, and hyssop are injected, the patient rolled to and fro, and the injection continued until the fluid which escapes no longer contains pus. The fistula is then allowed to heal and is cauterized. This he condemns, saying that he has never seen a cure, whereas by the procedure of his master Theodoric a cure can usually be assured. The treatment he favours is as follows: Drugs, cauterizing the fistula, or, if the pus cannot be cleaned up or expelled through the fistula because it is too high or too narrow, an opening should be made in the most dependent part of the chest, between the fourth and fifth ribs, counting upwards; by this means the pus is soon evacuated. The reason for the empyema becoming fistulous is, according to him, that the surgeon fails to recognize that pus has formed in the chest, &c. He does not appear, however, to give any signs by which an early empyema may be recognized, and the symptoms that he describes are not pathognomonic.

(V) Renaissance.

John of Vigo, born in 1460, shows a knowledge superior to and much more practical than that found in Henri de Mondeville's writings. Apostemes in in the breast, he writes, arise from two causes: (1) From a primitive cause, such as an injury; (2) from a cause antecedent, such as a fever. As an example of the former he gives the following case:—

"There was a labourer, whyche satte upon a wall. And he had a sone of thre or foure yeres of age., whyche came unto him upo the wall, whom, as the father saw, he rose up to mete hym, and by an euvll chaunce, they fell downe bothe. And the sayde labourer was sore hurte in the rybbes., so that it came to a greate apostemation. And when the Aposteme beganne to enclyne towarde maturation he was vexed with a sharpe fiever, wherefore it was necessarye to open the Aposteme, accordynge to the length of the rybbes. The incision was made very greate and depe, for the Aposteme was greate, and there issued out greate quantitie of matter. And one daye, at the tyme of his Dressynge, nature voyded at ones in one instante, a greate quantitie of matter by the opened place of the Aposteme, by the Patientes mouthe, and hys bellye. We seinge thys chaunce, ordeyned conuenyente potions, wasshynges and mundifycations, (whereof we wyll speake in the chapitre of a wounde that pearceth into the breest) so that by the ayde of God, we restored the labourer unto his health agayn."

When the empyema arises from a fever the diagnosis is to be made from the pain, heaviness of the place, local œdema, pulsation or beating. "When the aforesaid signs be observed by a wise Chirurgyen and when the aposteme is come to maturation let deep incision be made after the length of the ribbes and after the quantity of the matter. For when the matter is in great abundance the opening must be the greater. At the first you shall not suffer much filth to issue out, that nature be not too much feabled."[1]

Ambroise Paré (1510-90) does not greatly advance the subject. He employed drainage tubes of gold, silver and lead and placed over the opening a large sponge steeped in aqua vitæ, "both to hinder the entrance of air and to draw forth the filth there by its gentle heat." He does not appear to have diagnosed or treated early empyemata.

Fabricius ab Aquapendente,[2] Harvey's teacher (1537-1619), wrote at length and well on the subject of empyema. He deplores the fact that operations

1 "The Most Excellent Works of Chirurgerye," translated by Rich. Treherne, 1543; Book II, "The Fifth Treatise of Apostemes," chap. i, &c.

2 "De operationibus chirurgicis," pars I, cap. lxvi, &c.

were seldom performed for this condition, and attributes it to the facts that there were not sufficient surgeons who knew anatomy or could lance with safety, that patients were too timid and namby-pamby to allow of operations of that kind, and that there was great risk of offending them by suggesting it.

(VI) Seventeenth and Eighteenth Centuries.

Lowe, in "A Discourse of the Whole Art of Chirurgerie," 1612, says that for empyema an opening should be made by cauter or launcet, especially by the cauter, "for neither doth it close so soon nor is it so dolorous." He adds that the operation is seldom successful, but that he cured one, John Buchan. His views both of treatment and prognosis were those generally held.

Sydenham (born 1624) makes no mention of operation in empyema. His only treatment for pleurisy or empyema was by bleeding and drugs, the venesection to be performed on the same side as the disease. And this in spite of the work of Harvey published many years previously. Either he was ignorant of or he ignored Harvey's work. In this he compares very unfavourably with Richard Wiseman, who, in his "Eight Chirurgical Treatises," while he shows clearly the prejudice that existed against operating on the chest, relates several cases proving that he himself considered that pus should be evacuated from the pleural cavity, but he does so only in late stages of the disease.

Throughout the seventeenth and eighteenth centuries numerous treatises were written on empyema, but these were largely academic, and so many objections were urged against operation by men eminent in their day that the few who actually performed it had little influence among their contemporaries. John Hunter says very little about empyema. He writes: "When the symptoms are known to arise from the presence of a fluid in the chest, it should in general be let out by an operation called paracentesis thoracis, which is only making an opening into the thorax and allowing the fluid to flow out." At Guy's, however, one of the surgeons was more inspired, and in 1754 Joseph Warner[1] published three or four cases which he had treated successfully by free opening. An incision 3 in. long was made, the finger inserted, all the adhesions broken down and the lung freed. The wound was kept open by tents, and these were discontinued as the discharge began to cease, which normally occurred in fourteen days. The patients were well in six weeks. This treatment has a very modern ring about it, and was very bold for the period in which he practised. Warner's one fatal case is interesting as showing the normal procedure of this period:—

A patient, aged 37, was seized in May, 1750, with acute pain in the right side. He was at first bled by an apothecary, but, getting no better, he was admitted in July to hospital under the care of a physician. This physician prescribed for him for four months, but, as the patient got very much worse, he was "blooded" again; this having no effect, Joseph Warner was called in, who, observing that the right side of the thorax was greater than the left, and that the patient was unable to lie on his left side, and that there was some thickening of the integuments, decided to perform the operation of empyema. The patient was greatly relieved, but he died subsequently, and, post mortem, it was found that the empyema had eroded the diaphragm and invaded the liver.

The diagnosis was made by the posture of the patient, fever, fluctuation, enlargement of one side of the chest, and thickening of the integuments or pointing.

[1] "Cases in Surgery," 1754.

In 1765 Lurde recommended the trocar, but Chopart and Desault were both against him.

Ill-fortune dogged the establishment of effective treatment, for, just as one observer would show the fallacy of one objection, someone more influential would maintain the opposite. The theoretical objections were as follows: (1) The danger of the fluid coming out all at once, which, as we have seen, was held by Hippocrates. (2) The danger of the admittance of air, a delusion which, in spite of much evidence against it, and in spite of the work of Lister, was cherished until after 1870. It is interesting to find an article by Sir Douglas Powell in the *British Medical Journal* so late as 1872, in which he speaks of the urgent necessity of preventing the admission of air, and in the same year to find Sir Clifford Allbutt saying, in the *Practitioner*, that the cause of pyogenesis of a pleural effusion was not the entrance of germs, "as Dr. Maclagan suggests," but the oxidation of certain low forms of effusion. (3) That the effusion would reaccumulate just as happens with peritoneal effusions; and (4) that the lung would not expand again (which may well have been the case when the cases were left so long untreated).

(VII) Nineteenth Century.

Even up to the beginning of the nineteenth century there were no clear indications for operation, few means of diagnosis, and none for the early recognition of the disease; paracentesis was rarely performed, except for traumatic effusion and pointing empyemata. There was seldom any attempt at free evacuation of the fluid. Operative measures, only employed when unavoidable, were, as a rule, directed to letting out the pus little by little. Empyema was frequently confused with phthisis and with abscess of the lung, and even post-mortem findings were misinterpreted, a large empyema with a completely collapsed lung being thought to be a lung destroyed by suppuration, the empyema being the remains of the absent lung (Audouard). But now all was to be changed through two discoveries: that of percussion by Auenbrugger in 1778 (popularized by Corvisart thirty years later), and that of auscultation by Laennec in 1816.

Although we owe the early and exact recognition of empyema to Laennec, he was not a pioneer in its treatment; for, though he said that the operation for empyema should come to be much more employed as the knowledge of the use of mediate auscultation became disseminated, he says later: "L'opération de l'empyème est rarement suivie de succés," and so, as Trousseau says, "Il enlève d'une main ce qu'il accorde de l'autre."

Between the discoveries of Auenbrugger and Laennec, M. F. M. Audouard, of Montpellier, doctor to the French Army in Italy and in Spain, wrote in 1808 his excellent little work on "The Radical Cure of Empyema." He relates interesting cases. He classifies pleural effusions into purulent, serous and hæmorrhagic, and says that the first usually arise from affections of the lung or the pleura, the second from affections of the heart, the third from wounds or a rupture of a blood-vessel. The symptoms were: difficulty of respiration; cough; a heavy pain in the hypochondrium. The signs: prominence of false ribs on side of disease, absence of sound in this part of the chest; dullness on direct percussion of chest wall and the flow of the liquid heard on gently rocking the patient, which the patient himself can hear and feel. This sign, the flow of the liquid, he considered indispensable and infallible. The less important signs were the posture adopted (patient lying on affected side), fever, &c.

The treatment was evacuation of pus by incision, made by a knife, preferably the bistouri boutonné. He said that the entrance of air could not be prevented and the pus should be let out all at once. In this he opposed the established orthodox opinion of centuries, which had been held by practically every physician from Hippocrates downwards; and though his book had some influence his opinion was by no means accepted generally, and for years after this we find cases in the medical journals from time to time, recording, as an extraordinary thing, that although the fluid had escaped all at once the patient did not die but grew better. So late as 1867 we find in the *British Medical Journal* (May, 11) a case of one Edwin Bishop, a carter, who had empyema: his chest was opened, some pus allowed to escape and then a firm compress applied. That night, in bed, the compress slipped, three pints of pus flowed out and the patient made a rapid recovery, and a more dramatic case than this has been quoted from the writings of Pliny.

Baron Larrey[1] also favoured incision and letting the pus all out at once. He mentions displacement of the heart as a physical sign.

Besides Laennec we find Dupuytren, Sir Astley Cooper, Townsend, Gendrin and Stokes all speaking unfavourably of operation, in spite of the work of Larrey. Astley Cooper had never seen a successful case and Dupuytren reported only three or four successful cases out of fifty. The method he advocated was to push in a trocar from time to time and allow the pus to run out, hence no doubt his bad results. In fact he himself got an empyema but refused to be operated upon saying that he might as well die of the disease as of the operation.

The lack of bacteriological knowledge incalculably hampered the progress in the treatment of empyema. There was no discrimination between pneumococcal, tuberculous or streptococcal empyemata, or even between serous and purulent effusions, and this, together with the delayed treatment, made conclusions as to the value of different procedures very difficult to arrive at.

In 1835 Thomas Davies published his work. He is distinguished by having initiated one of the greatest diagnostic methods ever introduced, namely, the exploring needle, a method equalled by nothing, except perhaps by percussion and the sign of displacement of the heart. He maintained that thoracocentesis was useless in pneumothorax, but indicated in hydrothorax and empyema, especially in children. He used a small trocar, made no attempt to exclude air and recommended a preliminary exploratory puncture with a grooved needle to differentiate between a serous and a purulent effusion.[2] (Davies, "On Diseases of the Heart and Lungs," 1835.)

In 1836 the French Academy of Medicine held eight consecutive sessions to discuss the subject of empyema; utterly contradictory views were expressed and no conclusion of any value arrived at. Sédillot attributes this to the fact that equal regard was paid to men competent to deal with the matter as to those who commanded attention by an ignorant loquacity.

William Stokes, writing in 1837 ("Diseases of the Chest") on empyema says: "That the operation is often a justifiable one is not to be denied, and cases occur where from the rapid accumulation of fluid and the consequent urgency of the symptoms no choice is left us but to puncture the chest as a last resource of art. But it appears to me that in the majority of cases requiring operation there has been some error of omission or commission in the

[1] "Clinique Chirurgicale," 1829, ii, p. 242.

[2] He includes both serous and purulent effusions in the term "empyema."

early treatment of the disease." In fact he cites even a case of empyema of necessity which recovered without operation. When paracentesis must be done he advises the use of a small trocar and cannula; air may be allowed to enter and is harmless.

In 1841 Schuh and Skoda were decidedly in favour of operation. In the same year Sédillot wrote his excellent thesis on "The Operation of Empyema" (Paris, 1841). He believed in careful incision and evacuation of the pus but strongly opposed the admission of air and even says that enough pus must be left behind to prevent the access of air and yet not sufficient to separate the layers of the pleura (pour écarter les parois thoraciques). To ensure this during subsequent dressings he advises the cannula of M. Reybard. He used injections of fluid and approved of "cannules à demeures" in the last stages of treatment to drain the sinus.

In 1842 Hope[1] published his conclusions which were the result of the so-called "successful" treatment of thirty-five cases of empyema by mercury, in all of which he obtained a cure without operation and he claimed to show that operation was unnecessary as all cases of empyema amenable to treatment at all were curable without paracentesis. This might have been a great blow to the establishment of surgical measures but in 1844 Hamilton Roe published his paper in the *Transactions of the Royal Medical and Chirurgical Society of London*.[2] In this he severely criticized and shattered Hope's conclusions. In the same year Hughes published his papers in the *Guy's Hospital Reports* of 1844 and in the *London Medical Gazette* in 1846, his views agreeing with those of Roe.

Trousseau, however, has the honour of being one of the greatest pioneers in popularizing this work, and his personality and influence and that of his pupils, Bowditch of Boston in America and Clifford Allbutt at Leeds, had no small effect in establishing once and for all the operation for thoracocentesis. As early as 1843 he demonstrated the necessity for operation, not only in empyema, but in many cases of serous effusion as well. His indications were: empyema as soon as diagnosed, serous effusions if urgent symptoms were produced, syncope, dyspnœa, &c., dullness all over one side; and an increase of fluid, though preceded by ten days' vigorous therapeutic measures.

We have now reached the middle decades of the nineteenth century, a period when operative measures for empyema were beginning to be established. Enumeration of leucocytes and the use of the temperature chart and bacteriological investigation of the effusion were as yet unknown. In spite of the work of Warner, Audouard and Larrey, there was still hesitation in allowing the pus to flow out all at once; there was an almost universal dread of admitting air and many devices were employed to prevent this; trocars with valves and springs, flaps and tubes of gold-beaters' skin, a cannula left in and opened from time to time, the "cannules à demeures" of the French writers, a tube passed through a cannula and dipping into water below, a simple exhausting syringe with a two-way tap, &c. Some indeed opened the chest under warm water. The following is a *résumé* of the methods employed at this period (Sédillot, 1841):—

(1) Simple single puncture (Duverney, M. Faure).

(2) Repeated punctures in the same or different places (Boyer, Delpech Dupuytren, Bégin).

[1] *Med. and Chir. Rev.*, 1842, and *Dublin Med. Press*, 1842.

[2] *Med. Chir. Trans.*, 1844, xxvii, pp. 198-271.

(3) Puncture with introduction of a "cannule à demeure" in the chest devised so as to prevent the entrance of air (Pelletan, Recamier, Bouvier, Guérin, Reybard, Stanski, Massiat).

(4) Incision with immediate reunion of the wound (Benj. Bell). This was, however, only for serous effusions.

(5) Incision with a foreign body introduced into the wound to close it mechanically and yet to prevent its healing (Hippocrates, a linen tampon; Billerey, gentian root).

(6) Incision with a linen drain inserted in the wound. (An ancient method and one frequently employed.)

(7) Incision and a compress (Ravatan).

(8) Perforation of a rib (Hippocrates, M. Reybard).

(9) Evacuation of all the effusion (Duverney, Benj. Bell, le Baron Larrey).

(10) Injections, employed by about half of those who treated empyemata.

Another method soon to be employed was the use of rubber drainage-tubes. Chassaignac at the Lariboisière Hospital had, in 1856, operated on many cases of empyema with success in this way ("Traité de la Suppuration et du Drainage," vol. ii.), and soon Goodfellow and De Morgan (1859), and others reported successful cases treated similarly. Frequently two openings were made and the rubber tube threaded through both.

In the 1859 edition of John Bennett's "Principles and Practice of Medicine" we find a retrogression. "An error was made in making a free incision, instead of a small puncture, to draw off the purulent matter. . . . It was probably undertaken with the idea formerly so prevalent, that pus is injurious to the economy, and when known to exist should be let out as soon and as freshly as possible. We now know that there is nothing to be feared from the mere presence of pus either in the lung or pleural cavity; and that the most natural method for its disappearance is by absorption and elimination. Still, when large in amount, and either pointing externally, or displacing the heart internally, no danger can arise from making a puncture with a small cannula, as practised by Messrs. Cock and Syme, and sanctioned by Drs. Hughes and Alison."

In 1864 the Société Médicale des Hôpitaux de Paris, after discussing the *pros* and *cons* of thoracocentesis arrived at the following conclusions: (*a*) The operation is usually unsuccessful in chronic pleurisy; (*b*) there is urgent necessity of operation in cases of immediate asphyxia, excessive quantity of fluid causing the displacement of the viscera contained in the chest, and resistance of the purulent collection to ordinary treatment. In the same year Professor Roser of Marburg, dealing with some of the supposed objections said: "Air must be let in to get rid of the pus; the cavity soon became smaller, and the lung, contrary to what was supposed, expanded surprisingly."

By about the seventies Bowditch and Allbutt[1] were doing their work on empyema and publishing their results and—though there were still innumerable arguments about if and when to operate, and how and where, whether air should be admitted or the pus allowed to escape all at once, or whether injections should be used or not—steady advance was being made. In 1873 Clifford Allbutt with Dr. Bowditch published an authoritative article on the subject.[2]

The work of Pasteur was now beginning to solve many riddles of medicine.

[1] Allbutt, *Med. Times and Gaz.*, 1874, i, pp. 497, 527.

[2] *Practitioner*, 1873, x, p. 193.

Lister had shown the cause of suppuration and had published his paper on "The Antiseptic Principle in the Practice of Surgery" (1865), and before long his methods began to be employed in the treatment of empyema and in all the operations of paracentesis thoracis.

By 1873 Bowditch had operated 270 times with no deaths, his method being to make an incision low down in the back. He maintained that paracentesis should be performed directly a diagnosis of empyema was made, and that the pus should never be allowed to point. He said that a valvular opening was useless, as air could not be excluded by these means and, moreover, that it was harmless.

About 1872 Behier, in France, helped to popularize paracentesis by the method of capillary drainage tubes and advocated the withdrawal of all effusions, whether great or small, and reported excellent results.

In 1876 Peyrot published a valuable paper. He showed amongst other things the difficulties experienced in employing aspiration methods of treatment and in the siphon drainage of Potain, and how recourse had usually to be had to incision. Papers by Goodhart and Blake, before this date, show the same thing.

In 1879 Estlander published his results of the treatment of old standing empyemata by rib resections. He was not the first to do resection. Galen did it, for necrosis of rib, and in 1868 Heyfelder proposed to resect portions of ribs if these approximated during retraction of the chest wall. There are several references to a similar procedure in the literature of the seventies; none of these resections, however, were primary, and it is to one of our own countrymen, Sir William Arbuthnot Lane, that honour is due for making one of the greatest contributions to the treatment of empyema that has been made since the time of Hippocrates. He realized that free evacuation of the pus was essential to successful treatment and that various mechanical difficulties prevented free drainage, and in 1882 he performed his first primary resections of ribs for empyema. He published his first five cases in *Guy's Hospital Reports*, 1882 (3rd series, vol. xxvi, pp. 45-56). The ages of the patients were respectively $5\frac{1}{2}$, 2, $4\frac{1}{2}$, 4 and 3 years. At the outset he writes: "I am not going to discuss the treatment of empyemas which have ruptured spontaneously outwards or which have been incised, but the primary treatment in the case of children." Within eight years this procedure became almost universal and its value, especially in older children and adults, is incontestable.

(VIII) Period of the Great War.

The treatment of this period is characterized by a reversion to aspiration methods, ingeniously modified in various ways, and by a method which I will call that of immediate closure; also, I hope, by the establishment of exploratory thoracotomy.

Though some of the discoveries of the present war were but rediscoveries of old knowledge a very great advance was made in the surgery of the chest. The names of Gask, Gray, Duval, Courcoix, Grégroire and others are intimately associated with this progress. We are in a position to-day to hope that before long, as Mr. Gask said in his recent Lettsomian Lectures, thoracotomy will become as safe and as easy as laparotomy; and in the words of John of Vigo, "The Chirurgien shall not refuse to cure anye hurte of the membres contayned in the inner parte . . . for nature by the Chirurgien's ayde workethe so well, that oftentymes it bryngeth that to passe, that seemed impossyble." In shell wounds of the chest it was soon found that the

ordinary method of resection and drainage were insufficient to deal with the suppurative conditions which ensued. Bone had to be freely resected, the ribs pulled widely apart, free access given to the pleural cavity, all foreign bodies, pus, blood, &c., removed, lung wounds repaired, the pleura washed out and the chest closed again. This method yielded the best results, and now it is being tried in civil practice with ordinary empyemata.

In conclusion I would say that the moral of my story needs no pointing. New discoveries demand the reviewing of old methods of treatment. Prejudice died hard, there has been too much discussion and too little putting to the trial; conclusions were reached on insufficient data, the scientific spirit was too often most deplorably lacking; moreover, century after century we read that the investigator having set aside all traditional teaching and all speculations of the philosophers, has proceeded by observation and experiment to unfold the secrets of nature, only to find that he himself plunges into a new series of errors.

Experiment and observation must of course be the basis of science, but the span of life is short and the experience of the human race recorded in its writings we dare not ignore. Better than the misplaced zealous iconoclasm of a Paracelsus or the isolation of a Sydenham is the spirit which Roger Bacon tells us actuated his friend and teacher Peter Peregrinus of Maricourt. "Through experiment he has gained knowledge of the things pertaining to nature and medicine and alchemy . . . he has examined all that belongs to agriculture . . . moreover he has considered the experiments even . . . of old witches . . . and to this end, that nothing may escape him which ought to be known and that he may perceive how far to reprove all that is false and magical."[1]

[1] Roger Bacon "Opus Tertium," cap. xiii, translated by H. Stanley Redgrove.

Section of the History of Medicine.

President—Dr. CHARLES SINGER.

The Parturition Chair: Its History and Use.

By C. J. S. THOMPSON, M.B.E.

THE use of a stool or chair during childbirth dates from a period of great antiquity. The earliest representation of a chair being employed for this purpose appears in a sculptured stone relief in a Birth House at Luxor, in which the accouchement of Amenophus III, in the year 1450 B.C., is depicted. In the portion of this relief which shows the birth of the child, the Queen is seated on a chair, her arms being held by two women, who are evidently nurses in attendance. A side view only of the chair is shown; it appears to have a low back over which is placed a cushion or folded cloth. In connexion with this early representation it is interesting to note that the parturition chair or stool has survived in Egypt for over three thousand years, and it is still commonly used in that country.

I do not propose to enter into the subject of the various positions customary during labour among the different peoples of the world, but on investigation there appears to be little doubt that the sitting posture was practised from a very early period.

With respect to the origin of the stool, according to a passage in the Book of Genesis,[1] the Hebrew women were delivered on the knees of an assistant. It is thought by some that this position probably suggested the use of a stool in place of the nurse's knee at a later period.

There is an allusion to the use of a stool in the Book of Exodus,[2] where the King of Egypt gives instructions to the Hebrew midwives; he says: "When ye do the office of a midwife to the Hebrew women, and see them upon the stools, if it be a son, then ye shall kill him." The Hebrew word "Ebnaim" is translated by some as "upon the birth stool," and from the Greek text "a bearing-stool, like a potter's wheel," from which one would infer it was circular in shape. Other commentators state that the word may mean "stones," and that it describes a custom followed by the Arabs at a later period, where the patient to be delivered was seated between two large stones.

Both Hippocrates and Soranus recommended the use of a chair to the Greeks, but apparently it was superseded by the semi-reclining position, which we have depicted in Greek sculptures.

There appears to be no representation of a stool or chair used by the ancient Greeks, although in later times they are said to have employed a stool on which the assistant nurse sat on a rounded projection at the back, in order to hold

[1] Genesis, xxx, 3. [2] Exodus, i, 16.

the patient who sat in the front on the forked part. This custom is still carried out in Greece, where a tripod stool is used for the patient, behind which, on another stool a little higher, sits the nurse assistant, who holds her arms round the patient so as to compress the lower part of the uterus, while the midwife sits in front.

The use of the stool in Italy has been known from the time of the Roman Empire, and it is employed at the present day in some parts of the country. A woman seated on a parturition chair is represented in a terra-cotta votive offering which was found near a temple of Maternity at Capua, and is believed to date from about A.D. 200. The custom seems to have spread north across the Alps into Germany and France.

In a manuscript of Moschion, of the eleventh century, there is mention of an obstetrical stool, and it is described as being like a barber's stool on which

FIG. 1.—Parturition stool described by Savonarola, fifteenth century.

the patient sits, a hole of crescent shape being cut out in the seat, big enough for a child to pass through.

In the thirteenth century, Albertus Magnus alludes to the custom of using a chair during childbirth, and Giovanni Savonarola (1384-1461) gives a description of an obstetrical stool illustrated in a printed edition of his work "Practica Maior," in 1559, which he also states was used in ancient Greece[1] (fig. 1). In his direction for preparing the lying-in room, he says: "First then the midwife should prepare a stool on which to place the patient, and the patient may adapt herself to it in such a way that the birth may be made easy. The patient is placed in front of the semicircular part of the stool, and behind her is a woman who sits on the couch and holds her, and behind her, a little higher, is another against whom she leans, guiding and supporting herself."

Between the fourteenth and fifteenth centuries, the stool of the earlier

1 "Practica Maior," 1559, Tractatus vi, Capitulum xxi, p. 272.

period appears to have developed into a chair with backs and sides, although the use of a low stool still survives in some parts of Europe, as shown in the type employed by the Cyprian women at the present time. This primitive form of stool, which has probably been used in Cyprus from a very early period, consists of a solid block of wood raised about a foot from the ground, with two sunken cavities in the seat. It has a low back, and two side arms for the patient to grip.

The parturition chair or stool has a wide distribution. Its use is known throughout the Eastern hemisphere, and it is a curious fact that chairs are used for childbirth in countries in the East where it is not customary to employ chairs for ordinary sitting purposes.

After the era of printing, the first description and representation of a chair for parturition is given by Roeslin, who wrote under the name of Eucharius Rhodion,[1] in 1513 (fig. 2). It will be noticed that this chair has a curved back

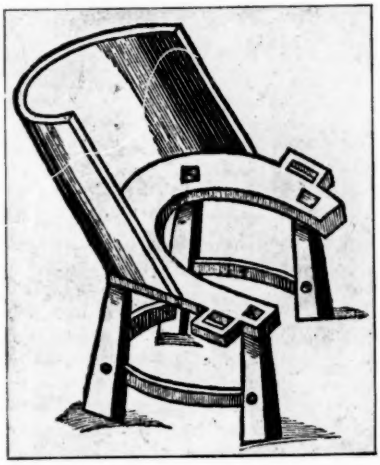

FIG 2.—Parturition chair described by Roeslin, 1513.

with a semicircular seat, with a horseshoe-shaped piece cut out of it. In the description, he remarks that it "should not be higher than 2 ft. from the ground, and for the purpose intended its utility cannot be questioned. The stout patient so placed can breathe more freely than when in a recumbent position, and the attendant nurse is enabled to perform her work more easily with her patient seated in this chair."

A chair of similar shape with a semicircular seat is described by Jacob Rueff[2] in 1554. The only difference between the chair of Rueff and that of Roeslin is the curtain that is placed round the back to protect the patient. Rueff gives an interesting account of his chair, and the reasons for its use. He states that "the chair should be of the shape of a compass, supported on four legs, the backpiece should slope backwards, with a hole pierced in the middle; it should

1 "*Der Swangern frauen und Hebammen Rosegarten*, 1513."
"De Conceptu et Generatione Hominis," 1554.

have a black cover over the lower part of it, for women in labour often wish to be covered, while others can grasp it if they wish to. The chair should be provided with covers and cushions at the back, so that the patient cannot do any harm to herself, or the child, whom the movements of the mother may disturb, shake or kick. When the mother is seated on the chair, ready to be delivered, the midwife should place a woman behind her back ready to support her gently under the arms, and if the pains seem to be growing very acute, the patient may be allowed to press on her uterus and push the child downwards. At her sides, two other women should be placed, who, with kind words, encourage the patient and hold themselves ready to help at a given moment. This being done, the midwife should seat herself in front on a stool, anoint her hands and the patient's matrix with oil of lilies and sweet almonds, mixed with chicken fat."

That the shape of the chair varied in different countries is probably due to the fact that in some places they were constructed by carpenters who had not seen one previously, and they were thus designed according to local ideas. Metzler mentions a chair that came to his notice which had been constructed by a carpenter in a village in Holland, who was completely ignorant of any similar apparatus of the kind. He fashioned it in accordance with the directions of a local midwife, to whose order it had been made.

During the seventeenth and in the early part of the eighteenth century, when the use of the parturition chair became common in Germany, it underwent several modifications.

The German chair of the seventeenth century was higher, with an open back and arms raised well from the seat. At the extremities of the flat-topped arms are two small posts for the patient to grip and so exert pressure on the muscles. This chair is portable and can easily be taken to pieces, and is the first one known with hand-grips.

Another style of chair is described by Heister in 1770.[1] It is broader and lower in the seat, and much higher in the back, while it retains the flat arms and hand-grips of the former type. This is the first chair known with a movable back which can be lowered so that the patient may take a reclining position if desired.

Another later chair described by the same author is much broader in the seat, and has solid sides and arms terminating in grips for the hands.

In 1791 a new type of chair was designed by John Christopher Stark. Stark's chair is much lighter in construction than any previously described and appears altogether more comfortable. It has an open back and curved arms with hand-grips and supports for the shoulders. A new feature is seen in the foot-rests which pass through slots in the two front legs and are secured by screws in a box under the seat so that they can be lengthened or shortened and adapted to the patient.

A little later on, Stein of Marburg designed a chair which he strongly recommended as possessing many valuable improvements. He claimed that it could easily be taken to pieces, the seat being hinged so that the sides could be taken apart and it might thus be carried from one place to another without difficulty. The back also is movable so that the patient can be placed in a recumbent position if necessary. It will be noticed that the seat is much deeper than in the other chairs shown and the aperture is oblong instead of semicircular. The arms are surmounted with curved knobs for the patient to grip and foot-rests are provided to give support and aid expulsion.

[1] "Institutions de Chirurgie," 1770.

Later on an addition was made in the form of an extension in order that the patient could be placed in a recumbent position if desired. It thus formed a chair bed with a seat for the nurse below the foot-rests. In order that the patient should not be disturbed, a panel of wood was made to close the aperture in the seat, over which a mattress could be placed after delivery.

A Swiss chair of the eighteenth century has a stuffed seat covered with leather. The back is movable and worked with an iron ratchet and pin on either side, so that the patient could be placed in a reclining position if necessary (fig. 3).

Another type is represented in a French chair of the eighteenth century. Designed in the style of a conventional armchair of that period, the back is

FIG. 3.—Swiss parturition chair with movable back, eighteenth century.

very high, stuffed and upholstered, while the seat is of plain wood, over which a sheet was placed when in use.

Parturition chairs were used in Portugal in the eighteenth century. In this chair the part below the seat is enclosed, while the seat itself, back and sides, are upholstered in red velvet.

A new type of chair was designed and described by Herbienieux in 1790, which came into use in Flanders. It is so constructed that it can be made into a bed-chair with a mattress if necessary. The foot-rests were fixed to the bottom by means of straps, and a flap could be lowered to fill in the hollow of the seat after the patient had been delivered.

A chair devised by Deventer about the same period shows few original features. The back, which is about 2 ft. high, is fixed to the seat by two hinges which permit of it being lowered, if necessary, to the ground and the

sides take to pieces so as to facilitate removal. At the extremities of the arms are two movable hand-grips of metal, which are fixed by a rod pierced with several holes fitted over a bolt or button. They could thus be shortened or lengthened according to the length of the arm of the patient, who was directed to grasp them in times of muscular exertion. An addition to the chair are two foot-warmers, heated through a metal jacket with hot cinders or bags of hot sand, into which the patient could place her feet.

A parturition chair now in the Wellcome Historical Medical Museum with some interesting traditions comes from Sicily. This chair, when I found it, had been in use in the island from the early part of the eighteenth century. It is of primitive construction and made of rough wood and painted dark green, with a crude representation of the head of Christ on the back. The seat, which has a semicircular aperture, is stuffed and covered with leather, and is hinged so that it will fold down flat. The sides are also hinged, and fold inwards, so the chair is quite portable and can be easily carried under the arm. Its history, which I obtained from the owner, is interesting. It belonged to an old midwife in Palermo, who was the descendant of a famous family who had practised and used this chair for over two centuries. She estimated that it had been employed by her in at least 2,000 cases of delivery. At one time it had been especially "blessed" by a great Church dignitary, and was believed to possess the miraculous power of alleviating the pains of labour in those who used it. It became known throughout the north-west part of Sicily as the "miraculous chair of Palermo," and was therefore in frequent request. It was sent to different parts of the island when required, and, I was told, when used, a "clean white sheet was always placed over it."

Another type of chair used in France in the latter part of the eighteenth century is of elaborate construction. It is made entirely of wood, with a high movable back, arms with hand-grips and adjustable foot-rests (fig. 4).

In Turkey, Syria and other parts of Asia Minor, the use of a chair for parturition is still maintained. The chair used is Syria is low with short legs and square back and sides with hand-grips for the patient to hold. Another type is placed on rockers so that the patient can be tilted backwards or forwards. Syrian midwives invariably take one of these chairs with them to their cases and when the patient is seated in it an assistant supports her, sitting behind or at her side, while the midwife crouches in front to support the perinæum.

A similar kind of chair is still used in Egypt, and when transported is usually covered by the midwife with a shawl or embroidered cloth. At the top corners are fastened embroidered handkerchiefs, in which are placed roses and henna, and the chair is thus carried before the midwife on her visit to the house where the birth is expected. Among the wealthier people the patient is generally put to bed after the accouchement, and remains there from four to six days; but among the poorer classes the women resume their work after a day or two.

Some years ago an old chair was found in the Basque provinces in Spain which had had a local reputation as a parturition chair, and was lent when required from one farm house to another throughout the district for that purpose. It was eventually acquired by the San Sebastian Museum, and preserved as a Spanish parturition chair. I saw it in San Sebastian some years ago, and am of the opinion that the chair is not Spanish but that it is an old English chair, with a triangular seat, of the seventeenth century, that may

have been taken to the north of Spain by some Englishman a century or two ago. The triangular seat was probably found convenient for the purpose of parturition; it thus acquired a reputation for that purpose.

In Japan, where the sitting position is still customary, the chair is constructed in the style of a box, the sides and back being made of thin strips of wood interlaced. It is set on the floor, and the patient seated in it rests against the back in a position that would appear to be anything but comfortable.

In the Philippine Islands parturition chairs are still used. There are two types. One is called the "Sandigan," and is employed in Samar. It has a sloping back, with broad flat arms, and the patient is placed in a semi-reclining position. It is made of straw and wood. The other type is called by the natives "Sarimbalani." It differs slightly in construction, the frame being made of bamboo and the back of wicker work.

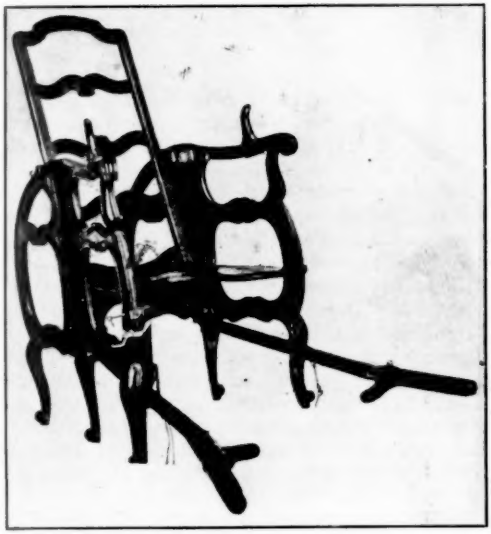

FIG. 4.—French parturition chair with leg rests, eighteenth century, in the collection of Dr. Hamonic.

According to Smellie parturition stools were used in England a century ago. He states that in remote parts of the country the patient, during childbirth, sat on a stool made in the form of a semicircle. I have not as yet been able to trace a stool of this kind that could have been used for the purpose. There are but few allusions in English literature to the midwife's chair, but one in Ben Jonson's comedy called "The Magnetic Lady," printed in 1640, is perhaps worth mentioning. Jonson adopted the practice of giving names to the characters in his plays according to their calling—such as Sledge, the blacksmith; Nightingale, the ballad singer; and Subtle, the trickster in the "Alchemist." Among the characters in the "Magnetic Lady" we have Compass, the mathematical scholar; Captain Ironside, the soldier; Practise, the lawyer; Needle, the tailor: and Mistress *Chair*, the midwife.

In the play, Needle, the tailor, is sent in haste for the midwife, who enters protesting against the hurried summons, with the words:—

> "Stay, Master Needle, you do prick too fast,
> Upon this business I must take some breath;
> Lend me my stool;[1]
> You have drawn a stitch upon me
> In faith, Sir Needle, with your haste."

From these few observations it is evident that the use of a stool or chair during parturition is of considerable antiquity, and the custom still survives in some countries to-day. In others it has disappeared with the advance of the knowledge of hygiene, in common with many other old customs associated with childbirth.

Specimens of the majority of the chairs described are in the collection at the Wellcome Historical Medical Museum, where they may be seen and examined by those interested in the subject.

Some Women Practitioners of Medicine in the Middle Ages.

By Eileen Power.

THE subject of the practice of medicine by women in the Middle Ages is one about which very little is known. It is clear from French and English metrical romances that the ladies who lived in feudal castles and manor houses practised it as a domestic art, nursing wounded knights back to life; and it is clear also that in many villages there were "wise women," who were skilled in the use of herbs and ointments, and sold medicines as well as charms. It is, however, the purpose of this paper to consider, not the amateur medicine of the chatelaine, nor the wise woman's knowledge of herbs, but something more closely approaching a professional practice of medicine and surgery by women in the Middle Ages. The most famous instance of this is that of Trotula and the women doctors of Salerno in the eleventh and twelfth centuries; but under the cruel searchlight of recent research these ladies are now vanishing away into historical insignificance. This is not altogether surprising; nevertheless it is worthy of notice that the legend of lady doctors at Salerno was widespread in Europe in the thirteenth century. In one of Marie de France's romances a sick man is told:—

> "In Salerno I have a relative, a rich woman with great possessions, who had dwelt there more than thirty years. She has so practised the art of physic that she is very wise in medicines and knows many herbs and roots. If you will go to her and take my letters with you and show her your case, she will take counsel and care of it."

Again, if we are to believe the French jongleur Rutebeuf, travelling herbalists (half quacks, half sellers of medicinal herbs) were wont to inform the gaping rustics that their prescriptions came from her. "My good friends," Rutebeuf makes one of these men say (I quote the translation by Jusserand in his charming book on "English Wayfaring Life"):—

> "I am not one of those poor preachers, nor one of those poor herbalists who stand in front of churches with their miserable ill-sewn cloak, who carry bags and boxes and spread out a carpet. Know that I am not one of these; but I belong to a lady who

[1] Which he was probably carrying.

is named Madame Trote of Salerno, who makes a kerchief of her ears and whose eyebrows hang down as silver chains behind her shoulders; know that she is the wisest lady in the four quarters of the world. My lady sends us into different lands and countries, into Apulia, into Calabria, . . . into Burgundy, into the forest of Ardennes to kill wild beasts in order to extract good ointments from them, to give medicine to those that are ill in body."

It must be admitted that here poor Trotula has turned into something perilously like a witch; and indeed among the prescriptions of lady doctors at Salerno which have survived, there are some which belong to magic rather than to medicine, such, for example, as the ointment to cure melancholy, which is made by gathering certain herbs on Ascension Day about the third hour, saying a *Pater Noster* the while. Such prescriptions are interesting in view of the fact that one of the charges most often made by the medical profession against women who practised physic was that of witchcraft.

If we leave Salerno and turn to mediaeval Paris we find several very interesting cases of women doctors against whom the charge of sorcery could not possibly be made. The most interesting of all is the case of Jacoba Felicie (*Chartularium Universitatis Parisiensis, ed. Denifle et Chatelain II, Nos.* 811-6). This woman seems to have been of good birth ("the noble woman Lady Jacoba Felicie, called Jacoba"), and in 1322 she was arraigned before the Court of Justice at Paris by the Dean and Masters of the Faculty of Medicine there, on the charge of having practised medicine in the city and suburbs, contrary to an ancient ordinance forbidding anyone to do so who had not studied and received the degree of Master of Medicine from the Faculty in Paris and been approved by the Chancellor. The statute was enforced by excommunication and a fine of 60 pounds (Paris), but, notwithstanding a solemn warning and inhibition, Jacoba continued to practise. All the documents in this case have survived and very interesting reading they are. The Dean and Faculty made their charge as follows:—

"That the said Jacoba visited many sick folk labouring under severe illness in Paris and the suburbs, examining their urine, touching, feeling and holding their pulse, body and limbs, (2) that after this examination she was wont to say to the said sick folk 'I will cure you, by God's will, if you will trust in me,' making a compact with them and receiving money there from, (3) that after the said compact was made between the said party and the sick folk or their friends that she should cure them of their internal sickness or of wounds upon their outward body, the aforesaid party used to visit them several times assiduously and continually inspecting their urine and feeling and touching their limbs (4) and that after this she gave and gives to the aforesaid sick folk sirups to drink, conformative, laxative and digestive, as well liquid as not liquid, and aromatic and other potions, which they often drink and have drunk in her presence and at her order (5) and that she continues so to practise though unqualified in the schools of Paris and unlicensed by the Chancellor of Paris and the Dean and Magistrates, (6) that she has been warned and inhibited but (7) goes on as before."

It is obvious here that what the doctors objected to was that Jacoba was taking herself seriously and adopting all the regular methods of diagnosis and treatment. One may guess that what they objected to still more was the fact that this woman clearly had a great reputation in Paris and was extraordinarily successful in her cures. It is a delightful irony that in order to clinch their case against her they proceeded to call eight witnesses (both men and women) who could testify that she had used these methods of diagnosis and treatment, that she was considered as a wise physician, and that she had successfully cured them. Many of them deposed that they had been given up by several

doctors, who had failed to perform the cure subsequently worked by Jacoba, and they set forth the names of these doctors, which must have been somewhat galling for the profession. Nearly all bore witness to her great repute in Paris; one stated that "he had heard it said by several that she was wiser in the art of surgery and medicine than the greatest master doctor or surgeon in Paris"; another had heard it said that she had cured the Royal Chancellor of gout, and his nephew, who had been bedridden. All testified that she made no pecuniary compact with them beforehand; she told them that she wanted no money unless she cured them, and after their cure they paid her what they thought fit. Some of them gave interesting details as to the treatment which they had received from her. On this chorus of praise and gratitude the Faculty of Medicine relied to secure the conviction of Jacoba.

Jacoba's answering plea is an interesting forecast of the case for women doctors, as it was to be so often argued over five centuries later. She argued that the statute under which she was arraigned was intended to restrain ignorant and foolish persons who knew not the art of medicine; but she was not of that number and therefore could not be charged under the statute, for she was learned in the art of medicine and well instructed in its precepts. She pleaded that her knowledge must be judged by her results and that it ought to be presumed that she was skilled in the art of medicine, since she cured all her patients. She went on to speak of the necessity for women doctors in general, asserting in words which might have been spoken by Dr. Sophia Jex Blake or any of the pioneers of the nineteenth century:—

"It is better and more seemly that a wise woman learned in the art should visit a sick woman and inquire into the secrets of her nature and her hidden parts, than that a man should do so, for whom it is not lawful to see and seek out the aforesaid parts, nor to feel with his hands the breasts, belly and feet, &c., of women; a man should ever avoid and flee as much as he can the secrets of women and of their societies. And a woman before now would allow herself to die rather than to reveal the secrets of her infirmity to a man, on account of the honour of the female sex and of the shame which she would feel. And for these reasons many women and also men have perished of their infirmities, not being willing to have doctors, lest these should see their secret parts. And concerning this there is and has been public knowledge and rumour and the Dean and Masters will not deny it."

She argued that even supposing (without prejudice) that it were a bad thing that women should practise physic, nevertheless it was a worse thing that these people, who were ashamed to reveal their infirmities to a man, should die; and of two evils the lesser was to be preferred.

The doctors filed a reply to her plea in which they discreetly took no notice of her general case for women doctors. They founded their case on the undeniable fact that she had not been approved by the Faculty, arguing that therefore she must be utterly ignorant of the art of medicine, not having heard it taught in the schools. As to the cures which she was said to have made, they say "her plea that she cured many sick persons whom the aforesaid masters could not cure ought not to stand and is frivolous, since it is certain that a man approved in the aforesaid art could cure the sick better than such a woman"—an unconvincing appeal from evidence to *a priori* reasoning. They also said that if no woman was allowed to be advocate or witness in a criminal case, how much more should she be disallowed from practising medicine, giving drinks, foods and plasters when she did not know the cause of the infirmity through study of the art of medicine; since it was worse to kill a man than to lose a lawsuit.

The issue of the case was a foregone conclusion, and Jacoba Felicie was

again inhibited from practising her healing profession. Several other men and women were inhibited in Paris about this time, and the Faculty of Medicine seems to have been making a "drive" of illicit practitioners. The women offenders included a certain Joan "conversa" (lay sister), Belota the Jewess, Margaret of Ypres (called "surgeon"); and between the years 1322-31 several other women are indicted.

I have spent some time over the case of Jacoba Felicie, because it is the only one in which we know the details of a woman's practice of medicine, and because she was clearly a person of exceptional knowledge and skill. I must now pass on to England. Here we have extremely little evidence. Miss Mary Bateson, in her book on "Medieval England," says that Queen Philippa had at one time in her suite a female "surgeon," Cecilia of Oxford, but I have hitherto been unable to trace the source of this statement. A short time ago, however, I was fortunate enough to come across an unpublished petition in the Public Record Office, which contains the plaint of another English woman doctor. The petition is in mediaeval French, and I will give a literal translation before saying a few words of comment on it:—

"To the very excellent and redoubtable, our very gracious lord the King. Your poor bedeswoman Joan, formerly wife to William of Lee, prays very humbly: that since her aforesaid lord was killed upon your first expedition into Wales, wherefore your aforesaid poor bedeswoman was left without support, and so continues, she went barefoot and did the fasting penance, which is called the fast of St. Mary, praying night and day to God and to his glorious mother St. Mary to maintain your royal and glorious estate. And she has nought whereby to live save by physic (fesik) which she has learned. May it please your highness and most gracious lordship to grant to the aforesaid poor bedeswoman a letter under your great seal, that she may safely go about the country to practise her art without hindrance or disturbance from all folk, who despise her by reason of her said art. In God's name and by way of charity."—*P.R.O. Ancient Petitions, File* 231, *No.* 11510.

This petition is undated, but from internal evidence it is possible to get the approximate date. On the face of the petition is scrawled in Latin: "To his beloved Thomas Grey, Constable of the Castle of Bamburgh." I am unable to hazard any suggestion why this petition should be sent to the Constable; but the inscription is fortunate, because a search in the Calendar of Patent Rolls shows that Thomas Grey, of Werk, knight, received a grant of the office of Constable of Bamburgh Castle, on August 29, 1404, and that he surrendered it on May 31, 1408. This enables us to say that Joan du Lee sent her petition to the king between 1404 and 1408, and the expedition to Wales, to which she refers, is Henry IV's first expedition against Owen Gendower in 1400. It is unfortunate that prolonged search has yielded no further information about Joan. There is no record that the king gave her his protection; and there is no means of saying what was the special reason of her persecution. It may have been that people suspected her of being a witch, or it may have been that the doctors were attacking an illicit practitioner. It is at any rate interesting that some years later (in 1421), the physicians petitioned Parliament that no man should be allowed to practise physic without having graduated in "the scoles of Fisyk withynne som Universitee, that is to say but he be Bacheler or Doctour of Fisyk, havynge Lettres testimonyalx sufficeantz of on of those degrees of the Universite in the whiche he toke his degree yn; undur peyne of long emprisonement and paynge xl li to the kyng; and that no Woman use the practyse of Fisyk undre the same payne."—(*Rot. Parl.*, iv, p. 158.)

Recently Discovered Records of Ancient Cures.

By M. N. Tod.

(Lecturer in Greek Epigraphy, Oxford University.)

Among the many ancient Greek inscriptions relating to medicine, the most famous are the records of miraculous cures effected by Asclepius at his sanctuary near Epidaurus, in the north-eastern part of the Peloponnese. The traveller Pausanias, who visited the Asclepieum in the second century of our era, speaks of six slabs still standing in his day within the sacred precinct, the survivors of a larger number originally set up there, on which were inscribed, in the Dorian dialect, "names of men and women healed by Asclepius, and in addition the disease from which each suffered and how he was cured" (Paus. ii, 27, 3). Of these inscriptions considerable fragments were discovered during the excavations conducted by Dr. Cavvadias, in 1883, on the site of the Asclepieum.

One slab—proved to have been the first of the series by its dedicatory formula, "God. Good Fortune," and by its title, "Cures wrought by Apollo and Asclepius"—has been almost entirely recovered by piecing together nine fragments found among the ruins of the ancient *Abaton*, or Hall of Incubation. Of a second slab twenty fragments have long been known, but many are still missing, while of a third slab only a single fragment survives. We also possess several records of individual cures, engraved on separate stones, by grateful patients; these are probably some of the *pinakes* referred to by Strabo (viii, 374). All these texts have been so adequately edited and so amply discussed that it will be sufficient here to refer to *Inscriptiones Graecae*, iv, 951-6; Dittenberger, *Sylloge Inscriptionum Graecarum*, iii (3rd ed., 1920), 1168-70; O. Weinreich, *Antike Heilungswunder*, 1909, and C. Singer in R. W. Livingstone's *The Legacy of Greece*, 1921, p. 222 foll.

Last year brought us a welcome addition to these records. The epigraphical results of more recent excavation of the Asclepieum, published by Dr. Cavvadias in the *Archaiologike Ephemeris*, 1918, p. 155 foll. (issued in July, 1921), include two further fragments, found in 1900 and 1918, of the second of the above-mentioned steles (*I.G.* iv, 952), enabling us to restore the mutilated lines 60-85, and in particular to reconstruct the narrative of the cure of Thersander of Halieis in lines 69-82.

A third stele was also found in 1900, and is now for the first time fully published, though a provisional account of some parts of it appeared in *Mélanges Perrot*, 1903, p. 41 foll. It is uniform in dimensions with the two previously known and is practically complete, though purposely broken into two in order to serve as the threshold of a later building. The tread of countless feet has worn away much of the surface, rendering the text illegible; yet a good deal remains, or can be restored, in the first thirty-two and the last twenty-three lines. Like the others, this stele was probably engraved in the second half of the fourth century B.C. Lines 1-38 contain the records of six cases, lines 115-137 of five; thus it is probable that some twenty-five records in all were engraved on this slab. The first is that of a dumb girl: the details of the cure are not discernible, but some part in it is played by a sacred serpent. The second is that of Melissa, who suffered from a swelling (*phuma*) in her hand caused by a viper. The third seems to have no medical aspect, but relates to the recovery, by the god's aid vouchsafed in a dream, of a lost

treasure. Then follows the story of Amphimnestus, who, apparently, vowed to Asclepius the profit on a load of fish which he carried to Arcadia, sought to defraud the god, was suddenly visited with some misfortune, but after confession sought and won divine forgiveness. Next come mutilated accounts of the cures of a man suffering from an abscess (*empuos*) and of a dropsical woman. The concluding portion of the document is better preserved. It tells of an Argive subject to epilepsy, who in a dream saw the god standing by him and pressing his eye (?) with his signet-ring. The story of Heraclitus of Chios is not clear, but he appears to have visited the sanctuary on a journey from Peiraeus to Leucas, and to have sought and found divine guidance leading to a successful business transaction. The stories of the lame Demosthenes and that of the curing of a blind man are given in full below. The former is remarkable for the very long time (four months) spent in the Abaton. The last item in this curious medley refers to a native of Epidaurus, and is also given in full below.

I append the Greek text, accompanied by an English translation, of several of the above narratives, as read and restored by Dr. Cavvadias. The restored portions are indicated by being placed within brackets.

(*a*) *I. G.*, iv, 952, Ἀρχ. Ἐφ., 1918, 158, ll. 69-82. The passage has long been known in a very mutilated form, but the recent discoveries enable us to reach a practically complete version.

[Θ]*έρσανδρος Ἁλικὸς φθίσιν. Οὗτος ὡς ἐγκαθεύδων* [*οὐ*]*δεμίαν ὄψιν*
70 [*ἑ*]*ώρη, ἐφ' ἁμάξας* [*ἄμπαλ*]*ιν ἀπεκομίζετο εἰς Ἁλιεῖς, δράκων δέ τις*
[*τ*]*ῶν ἱαρῶν ἐπὶ τ*[*ᾶς ἁμ*]*άξας καθιδρυμένος ἦς, τὸ πο*[*λ*]*ὺ τᾶς ὁδοῦ περιη-*
[*λι*]*γμένος περ*[*ὶ τ*]*ὸν ἄξονα διετέλεσε. Μολόντων δ'* [*α*]*ὐ*[*τ*]*ῶν εἰς Ἁλιεῖς*
[*κα*]*ὶ τοῦ Θερσ*[*ά*]*νδρου κατακλιθέντος οἴ*[*κο*]*ι, ὁ δράκων ἀπὸ τᾶς ἁμά-*
[*ξα*]*ς καταβὰ*[*ς τ*]*ὸν Θέρσανδρον ἰάσατο.* [*Τᾶς δ*]*ὲ πόλιος τῶν Ἁλικῶν*
75 [*ἀγγε*]*λ*[*λ*]*ούσας τὸ γεγενημένον καὶ διαπορ*[*ουμένας*] *περὶ τοῦ ὄφι-*
[*ος, πό*]*τερον εἰς Ἐπίδαυρον ἀποκομίζωντι* [*ἢ κά νιν κα*]*τὰ χώραν ἐῶν-*
[*τι, ἔ*]*δοξε τᾶι πόλι εἰς Δελφοὺς ἀποστεῖλα*[*ι χρησομέ*]*νους πότερα*
[*π*]*οιῶντι, ὁ δὲ θεὸς ἔχρησε τὸν ὄφιν ἐᾶν αὐ*[*τεῖ καὶ ἱ*]*δρυσαμένου*[*ς*]
[*Ἀ*]*σκλαπιοῦ τέμενος καὶ εἰκόνα αὐτοῦ πο*[*ιησαμέ*]*νους ἀνθέμεν* [*εἰς*]
80 *τὸ ἱαρόν. Ἀγγελθέντος δὲ τοῦ χρησ*[*μοῦ, ἁ πόλι*]*ς ἁ τῶν Ἁλικῶν*
ἱδρύσατο τέμενος Ἀσκλαπιοῦ [*αὐτεῖ καὶ τὰ ὑπὸ το*]*ῦ θεοῦ μαντ*[*ευ*]-
σθέντα ἐπετέλεσε.

"Thersander of Halieis (suffering from) phthisis. When sleeping in (the sanctuary) he saw no vision, he was departing [back] to Halieis by carriage and one of the sacred serpents was settled upon the carriage (and) remained for the greater part of the journey twined around the axle. But when they had come to Halieis and Thersander lay abed at home, the serpent descending from the carriage healed Thersander. And when the State of the Halieans [announced] what had happened and was at a loss to know about the snake, whether to take it back to Epidaurus or to allow it to remain where it was, the State resolved to send men to Delphi to consult the oracle as to which they should do, and the god replied that they should leave the snake there, and after founding a precinct of Asclepius should make an image of him and should dedicate it in the sanctuary. Now when the oracle was reported, [the State] of the Halieans founded a precinct of Asclepius [there] and fulfilled what the oracle of the god had enjoined."

(*b*) Ἀρχ. Ἐφ., 1918, 170, ll. 123-137. These three narratives form the concluding portion of the newly-discovered stele.

Δαμοσθένης

- - - - - - - - - - - κ[η]λέων, οὗτος ἀφίκετο εἰς τὸ ἱαρὸν ἐπὶ
125 [κλίνας καὶ ἐπὶ βακτηρίας] ἀπερειδόμενος περιεπορεύετο· ἐγκοι-
[μαθεὶς δὲ ὄψιν εἶδε] ἐδόκει οἱ ὁ θεὸς ποϊτάξαι τετράμηνον ἐν τῶι
[ἱαρῶι παραμένειν, ὅ]τι ἐν τῶι χρόνωι τούτωι ὑγιὴς ἐσσοῖτο· μετὰ
[τοῦτο ἐνδὸς τετρ]αμήνου ἐν ταῖς τελευταίαις ἀμέραις εἰσελθὼν
[εἰς τὸ Ἄβατ]ον μετὰ δύο βακτηριᾶν ὑγιὴς ἐξῆλθε. Ἀνὴρ τυφλός·
130 [οὗτος ἐν τῶι] βαλανείωι τὰλ λάκυθον ἀπέβαλε, ἐγκοιμιζομένωι δὲ
[ἐδόκει οἱ φάμεν] ὁ θεὸς ἐν ταῖ κλισίαι ταῖ μεγάλαι μαστεύειν τὰν
[λάκυθον τάχιστ]α εἰσπορενομένωι. Ἀμέρας δὲ γενομένας, ἄγέ νιν
[ὁ θεράπων ποὶ] μάστευσιν, εἰσπορευθεὶς δὲ εἰς τὰν κλισίαν εἶδε
[τὰλ λάκυθον ἐ]ξαπίνας καὶ ἐκ τούτου ὑγιὴς ἐγέ[νετο]. Πα[μ]φάης
135 [Ἐπι]δαύριος φαγέδαιναν ἐνδὸς τοῦ στόματος [εἶχε. Οὗτ]ο[ς ἐγκ]οι-
[μαθε]ὶ[ς] ὅ[ψ]ιν εἶδε· ἐδόκει οἱ ὁ θεὸς διοίξας τὸ σ[τόμα ταῖ χειρὶ τὸ ἕλ]-
[κος] ἀ[φε]λεῖν καὶ ἐκκαθάραι τὸ στόμα καὶ ἐκ τού[του ὑγιὴς ἐγένετο].

"Demosthenes . . . he arrived at the sanctuary upon [a bed] and walked about leaning [upon a staff]. And having fallen asleep [he saw a vision]: the god seemed to him to command him to [remain in the sanctuary] four months, for within this time he would be whole. There [after within four] months in the last days he entered [into the Holy Place] with two staffs and came out whole.

"A blind man. [He] lost his oil-flask in the bath, and when he was sleeping the god [seemed to tell him] to enter [without delay] and search for the [oil-flask] in the great hostel. And when it was day [the attendant] led him [to the] search, and entering into the hostel he saw [the oil-flask] straightway and thereupon became whole.

"Pamphaës of Epidaurus [had] a cancerous growth in his mouth. [He having fallen asleep] saw a vision: the god seemed to open his [mouth with his hand and] remove [the sore] and cleanse the mouth, and thereupon [he became whole]."

Egyptian Deities associated with Healing.

At the meeting of the Section held at the Wellcome Historical Medical Museum, Wigmore Street, November 16, 1921, Dr. M. B. Ray demonstrated some Figures and Statues in the Museum relating to Egyptian deities associated with healing. A short description was given of Thoth, Ptah, I-em-hotep and Ta-urt.

Section of the History of Medicine.

President—Dr. CHARLES SINGER.

The "Trousse-galants" of 1528-29 and 1545-46.

By F. G. CROOKSHANK, M.D., F.R.C.P.

THOSE who are familiar with Hecker's account of the sweating sickness may recollect that a malady, known at the time as the trousse-galant, trousse-galland, or trousse-galand, is said to have devastated France in 1528, and that another epidemic, possibly of a like nature, carried the same name in 1545 and 1546.

Hecker did not regard these trousse-galants as manifestations of the sweating sickness, but rather as local prevalences which were a part of the general "epidemic constitution" (to use Sydenham's phrase) of the times during which they occurred, and he left the riddle of their clinical and epidemiological affinities unsolved.

What were these affinities?

The question is not merely curious; upon the answer depends the manner in which we shall solve one of the most fascinating problems in historical epidemiography, namely that of the nature of the sweating sicknesses themselves. And yet, although some reference is occasionally made to the *second* trousse-galant, I do not know that the *first* has been discussed, even in France, save incidentally and by Hecker.

The verb "trousser" (whence "trousse-galant") has many meanings, but its essential significance is expressed by the words "expédier vite." And, in most modern French dictionaries "trousse-galant" is defined as a popular name formerly given to "une maladie qui emporte le malade en peu de temps." This is following Littré, who says that the name has also been applied popularly to the *cholera morbus*. Larousse, however, going further, defines "trousse-galant" without more ado as "choléra sporadique."

Whilst thus the dictionary-makers, there does not appear to be the faintest shred of evidence that either the trousse-galant of 1528, or that of 1545-46, was dysenteric or diarrhœal in character, and these epidemics cannot therefore be admitted as choleraic in our sense of the term. How it was that the connotation of cholera became attached to this folk-name I will discuss presently; it is now necessary to state what is positively known concerning the two prevalences mentioned by Hecker.

I.

Hecker's brief and uncritical account of the first of these two prevalences is taken from the writings of Eudes de Mézerai, who flourished in the seventeenth century (1610-83), and obviously cannot be esteemed an original authority. But it is quite clear that de Mézerai derived his information from

the earlier work of Guillaume de Paradin—an historical writer little known to French epidemiographers—who lived during the time of the epidemics in question.

According to Paradin, the years 1525-30 constituted a sort of natural epoch during which the seasons were confounded, the crops failed, and pestilence, war, famine and licence, stalked gauntly through the fair land of France. This statement is extremely important when read in conjunction with citations that I shall make presently from Fernel and from Jordan.

However, what immediately interests us is that, in July and August, 1528, the French army before Naples was broken up by a sudden explosion of epidemic disease (Paradin, Martin du Bellay), and about the same time the crops at home in France failed miserably, so that returning soldiers were confronted with domestic misery and famine. What followed is best described in Paradin's own words:—

"Il s'engendra de la famine sus-dite, une nouvelle maladie, et inconnue aus Médecins laquelle outre ce qu'elle estoit très redoubtable pour sa nouveauté, soudeinneté et violence elle estoit si fort contagieuse qu'il n'y avoit celui qui s'en pust sauver de ceus qui avoient tant peu fust communiqué et conversé avec ceus qui en estoient espris.

"Cette maladie presente et tout mortifère s'attachoient aus hommes avec une grosse et rigoreuse fievre continue, et les mettoit si bas que la plus grand part en mouroient.

"Ceus qui par grande aventure en eschappoient se treinoient en grand pitié et langueur six ou sept semaines ne leur estans demeurez cheveus en teste ni ongles en piez et mains et le tout avec si grand desgoustement que toutes viandes leur saisoient mal au cœur.

"Et ne pardona cette horrible maladie à sexe ni age quel qu'il fust dont il mourut une grande partie du monde.

"A cette nouvelle maladie fut nouveau nom imposé, et fut nommé *Trousse-galand* pour la contagieuse mort qui l'en ensuivoit avec grande et impourvu soudeinneté."

All this happened in the autumn of 1528, but later, perhaps early in 1529, there was a second wave of pestilence, for Paradin says, a few pages farther on:—

"Mais, à fin que rien ne demeurast en la boette de Pandora que la poure esperance, survint une generale et furieuse peste qui redoubla les malheurs precedens."

Now, while this story given by Paradin is the only original account that I have been able to find of the public health in France in 1528-29 (during which year, say the Teutonic writers, that country completely escaped "the Sweat"), there is nevertheless one little piece of indirect evidence not without interest, and, possibly, importance.

Boutiot, who published in 1857 a small book dealing with bygone pestilences at Troyes, states that the malady epidemic in that city in 1529-30 does not appear to have been characterized by the tumours (i.e., buboes) which marked the plague there regnant from 1518-24. Boutiot, who certainly had access to all the municipal archives of Troyes, does not, unfortunately, give any reference or details, but, as he goes on to say that the malady of 1529-30 seems to have been a kind of "cholera morbus," it is permissible to believe that his authority made mention of the "trousse-galant" which, as we have seen, was considered, at the time Boutiot wrote, to have been a kind of "cholera morbus." (Cf. Littré.)

However this may be, Paradin's account clearly permits us to formulate certain definite conclusions concerning the malady of 1528-29:—

(1) It took the doctors by surprise, was esteemed a "new disease" and was given a "new name."

(2) It spread, seemingly by contagion, with extreme rapidity, and, while it affected persons of either sex and every age, was particularly notable for the dramatic suddenness with which it carried off the young and vigorous.

(3) It was not connected with any special stigmata: no rashes, spots, blotches, tokens or fluxes are recorded as distinguishing it.

(4) Death, when it ensued, was after brief illness: convalescence was tedious and attended by marked debility, with alopecia and affections of the nails.

(5) The epidemic was followed by a second wave, even more "furious" than the first.

(6) The whole affair occurred during a period of five years or so, marked, not only in France but elsewhere, by "sudorific fevers" (Fernel: Jordan), as well as by other strange maladies.

All these marks are those of epidemic influenza, much as we have known it, in some of its most striking forms; and it is not a little interesting to note that it was in France and Switzerland that, during the recent epidemics, alopecia and affections of the nails were chiefly noted (Merian).

We may perhaps provisionally conclude then, that the French trousse-galant of 1528-29 was a neurotoxic influenza, and may leave on one side for the moment the question of its relationship to the contemporaneous "sweating sickness" in England, Germany and elsewhere.

II.

In 1545 and 1546 a peculiar "pestilential fever," characterized by many of the epidemiological features of influenza in its "trailing" epidemic form, spread from Piedmont, through Savoy, into the Auvergne, and, it is said, so far north as Cambrai. This malady corresponded in its geographical range pretty closely with the influenzal encephalitis of 1890-91-92, called "Nonna," in North Italy and in Provence. It is described for us by Sander and by Ambroise Paré, and, like the epidemic of 1528-29, was known as "Trousse-galant." Like it too, it spared neither sex nor age: and all classes of the community were affected; but, as Paré says, "plustot les robustes que les debiles et les riches que les pauvres." Paré's description, which is more effective than that of Sander, leaves me with little doubt that this trousse-galant, like that of 1528-29, was a severe if peculiar influenza, and marked by neurotoxic phenomena. About the same time, however (in either 1544 or 1545), a sudden pestilence amongst the soldiery broke up our camp at Boulogne and extended rapidly to the French Army. This epidemic, mentioned by de Mézerai (again borrowing from Paradin), is also written of by Hecker as a "trousse-galant," but, so far as I can find, without any strict authority. Nevertheless, the fact is indisputable that the trousse-galant of 1545-6, described by Paré and by Sanders, was one of a whole congeries of influenzal and encephalitic maladies that, in epidemic guise, trailed through Europe from 1543 onwards, until 1547 or so, and again in 1551.

Some discussion as to the probable influenzal nature of certain epidemics in 1543 will be found in Corradi, and it cannot be denied that *encephalitis lethargica, myoclonica, et convulsiva* was mingled with influenza at Florence during that year (Cardan). According to Hecker "plague and petechial fever" raged in Germany in the same year, but the nature of this plague and spotted fever is not clear.

In Stow's "Survey," however, there is an account of a perfectly obvious

case of "encephalitis lethargica" which, in 1546, attracted much attention in London, and there is also some hint of a "sweat" having afflicted Galway in 1543 (Creighton).

It is suggested therefore that, in considering the nature of this second trousse-galant, attention should be paid to the comparative epidemiography of the times.

III.

After this second affair, the name "trousse-galant" does not appear to have been attached in any specific sense to any particular epidemic, but we owe to Dr. Creighton's learning one very valuable piece of information. In certain parish registers in England there are references to deaths during 1551 (the year of the fifth and last "Sweat"), from the "Stup-gallant" or "Stoupe! knave, and know thy Master." And Dr. Creighton makes the illuminating remark that these casual references in parish registers indicate a diffusion of the sweat of 1551 "all over England, in the manner of Influenza."

Now Creighton, as we know, never identified the sweating sicknesses as influenzas, but it is impossible, save on grounds of prejudice, to deny that the fifth sweat or "stup-gallant" in England during 1551 was an influenza, just as we have seen reason to believe were the earlier trousse-galants in France—that of 1528-29, contemporaneous with the "fourth sweat," and that of 1545-46 which we have just discussed. Again, the comparative record is almost conclusive. The fifth sweat (or stup-gallant) in England was contemporaneous with the "coqueluche," or influenza in Paris (le Paulmier, Reusner); with a sweat in Flanders (Brassavola); with epidemic pneumonia and fevers in Germany and Switzerland (cf. Hecker); with obvious influenza in Swabia (Crusius); with fever and encephalitis in Italy (Corradi); and with epidemic encephalitis in Siberia (Ozanam).

IV.

It may however be said that, if on the one hand the two trousse-galants, and the stup-gallant of 1551, appear to have been influenzas, nevertheless, on the other, their history is inextricably bound up with that of the sweating sickness. This is indeed the case: and the solution of the whole tangle appears to be that the fourth and fifth "sweats" in England (I am not here dealing with the first, second, and third "sweats") were indeed influenzas. This proposition, as is well known, was first put forward by Dr. Hamer in 1906, but there has been something like an obstinate refusal on the part of epidemiographers to weigh the evidence: a refusal, in part accounted for by too narrow a conception of epidemic influenza, as a "catarrhal" malady only: in part the result of inadequate acquaintance with the facts, and in part the outcome of a slavish adherence to what may be called the Teutonic theory of the sweating sicknesss.

According to this theory (for which Gruner, Haeser, Hecker, and Hirsch are chiefly responsible), the five classical sweats in England stand for recurrences of a peculiar malady, *sui generis*, bred of the corruption and degradation of the English race in the fifteenth and sixteenth centuries, and which only once—in 1529—spread to the Continent, even then sparing the French, Italians and Spanish, though not the Germanic tribes and Scandinavian peoples.

Hecker and Hirsch both believed that this sweating sickness, *sui generis*, is in some sort represented by the miliary fever of modern times in France and North Italy: and Creighton believed that the sweats in England developed

from the miliary fever which he thought to have been anciently endemic in Picardy and imported into England by Picard mercenaries just before the battle of Bosworth in 1485.

The crude notion of Gruner and Hirsch has been supported by a cobweb of fantasy in which positive assertions have been founded on negative findings, and in which one of the chief threads has been the declaration that, *in 1528 (29) the English sweat did not invade France*, since, in French history, there are no traces of any such prevalence in France during those years.

The crux of the whole question, then, is that of the nature of this trousse-galant of 1528(29) in France, which has been so unaccountably overlooked by almost all who have written on the topic. In a word, if neurotoxic influenza prevailed in France in 1528(29) when the sweating sickness raged in England, Germany, Flanders and Scandinavia, and, *ex hypothesi*, did *not* affect France, the odds, in an epidemiological sense, are all in favour, in Lord Herbert of Cherbury's words, of the maladies spread abroad throughout Europe in 1528-29 being "the same contagion of the aire, vary'd according to the clime." That is to say: Europe in 1528-29 was afflicted by a sudorific and neurotoxic, rather than by a catarrhal, respiratory, and gastro-intestinal influenza: an influenza, moreover, which, as in our own times, took on "local colouring" in different places. At any rate, such is the conclusion to which I have come after an honest attempt to review the whole of the evidence, in the light of Dr. Hamer's work—an attempt involving the desperate expedient of consulting the original authorities and not merely the inaccurate copyists put forward by so many as original authorities. One or two fresh items of evidence can, in consequence, be adduced, though without much hope of the conversion of a writer[1] who does not feel confident that (since the delivery of the Milroy Lectures in 1906) sufficient new light has been thrown on the historical question to convert what was, in 1906, an arguable proposition into an undoubted fact.

The first items are the account given by Paradin (already cited) and his clear statement of fact showing that, in France, the quinquennium 1525-30 was indeed a true "epidemic period," or "constitution." This is important, for the year of the fourth sweat in England (1528, according to Hecker and Creighton: 1529, according to Hirsch) and of the Sudor Anglicorum in Germany and elsewhere (1529) has hitherto been treated, save by Hecker and by Hamer, as a year of isolated epidemiological happenings rather than as a year entering into an epidemiological period or "constitution." Moreover, there are two definite and authoritative passages, in the works of two classical authors, which clearly show that Paradin's statement in respect of the five years 1525-30 in France—namely, that they were marked by a series of pestilential epidemics—is applicable also for the same quinquennium in Britain, in Flanders, and in Germany, during which "sudorific fevers" prevailed. And one, at least, of these passages, as clearly shows that the same "sudorific fevers" prevailed in France during these years as elsewhere. Thus, Fernel declares that "sudorific fevers" inspired great terror "in omnem inferiorem Germaniam, *in Galliam Belgicam* et in Britanniam" from 1525 to 1530, when, in the autumn, they became widely diffused. The expression *in Galliam Belgicam* may properly be taken to refer to Flanders and not to the kingdom of France as constituted at that day. Nevertheless, it refutes the foolish statement that French-speaking populations were immune to the sweats, and shows clearly that the great sweat of 1528-29 was the

[1] *Brit. Med. Journ.*, 1919, ii, p. 386.

culminating expression of an epidemic genius that had been "brewing up"—as does that of influenza, during a term of years. But Jordan's statement is even more remarkable. It is this:—

". . . Sudor Britannicus ex Anglia (ubi primum anno salutis 1486 conspectus dicitur, Henrico Septimo rerum illius Insulae potiente) vicina littora inficiens. *Gallos, Belgas et Germanos* ab anno 1525 usque 1530 vastavit et hic morbus denominatione(m) fortitus est."

It seems then pretty certain that, by whatever names these sweating fevers from 1525 to 1530 were called, the French people did *not* escape them and shared in the general diffusion which in 1528 and 1529 afflicted not only England and Germany, but, as we know from Forest, the Low Countries, Norway, Denmark, Poland and Transylvania; while the curious may satisfy themselves, from a careful study of Corradi and Villalba, that neither Italy nor Spain escaped the *thing*, even if the records do not mention *the name*. In the light of this conception of the relation of the trousse-galant and "sweats" of 1528-29, as elements of an influenzal constitution, the relation of the trousse-galant of 1545-46 to the influenzas and encephalitic maladies that prevailed in Europe from 1543 onwards up to the time of the "stup-gallant," "sweat" and "coqueluche" (or influenza) of 1551, becomes clear.

Incidentally, the contention of the writer in the *British Medical Journal* (already cited) that no "encephalitis" is shown to have preceded the sweats of 1528(9) and 1551 is disposed of.

Finally, the "catalepsy" mentioned by Forest, as prevalent amongst the soldiers at the siege of Metz (in 1553) may be referred to as illustrating once again how very frequently the nervous form now known as "encephalitis lethargica" has followed in the wake of the generalized and diffused forms of epidemic influenza.

V.

How is it, if the explanations thus given be correct, that the name "trousse-galant" has come to be defined by modern dictionary-makers as standing for a kind of cholera morbus, or, more simply, as "choléra sporadique"? The answer is not difficult to find. Originally, like so many popular names in epidemiological literature, it did not stand for any specific disease-concept, but was the name of one or two like epidemiological happenings. (The sweating sickness, "coqueluche," "spotted fever," and "sleepy sickness," are all cases in point.) As time went on the name came to be used in a purely attributive sense, as meaning, in Littré's words, "une maladie qui emporte le malade en peu de temps," without reference to any particular epidemic in the past, or to any particular form of disease. And, since few maladies take off a sick person so quickly as does "ptomaine poisoning," acute gastro-enteritis, and the like, it is not surprising that it thus became used for such diseases, when memory of the old trousse-galants had faded.

In 1643, for example, one, van der Heyden, wrote an odd but quite famous little book, in which, describing some form of epidemic disorder of diarrhœal nature, he says that death frequently and rapidly thereon ensues, "à raison de quoi me semblent mieulx s'accorder avec cette maladie les noms de 'Trousse-gallant' et de 'Felon.'" Here the two folk-names are used purely attributively or abusively, and it is interesting to note that while to-day in remote parts of France a peasant will speak of "charbon," or anthrax, as "trousse-galant," our peasants will speak of a poisonous whitlow as a "felon."

But nothing could be less like van der Heyden's malady than either anthrax or a whitlow—from the point of view of the pathologist.

There appears to be some evidence however that in the eighteenth century "trousse-galant" was vulgarly applied much in the sense suggested by van der Heyden, for in Le Sage's translation of the "Histoire d'Estévanille Gonzales" (edition 1743, p. 55), a widow is made to say, "Un choléra morbus, vulgairement appelé un trousse-galant, emporta mon époux en moins de dix jours." Perhaps this "choléra morbus" was a dysentery, or typhoid fever.

At any rate, since such was the usage in the eighteenth century we can well see how it was that Boutiot, in 1857, thought the trousse-galant of 1529-30 at Troyes to have been a kind of cholera, and that Littré, about the same time, should have framed his definition in the same sense. Yet there is something more to be said. The extraordinary coincidence in time and place, in Europe between 1832 and 1858, of what was thought to be Asiatic cholera and influenza, had everywhere caused epidemiologists to trace some epidemiological connexion between the two types of prevalence, and some confusion came, particularly in France, to exist in the popular mind concerning the two pestilences. Even when in the autumn of 1918, influenza broke out in Paris, it was suggested that "cholera" had arrived.[1]

This, however, is not all. During the great influenzal and "choleraic" period, that extended roughly from 1830 to 1860, it was noticed in France that there was an extraordinary series of outbreaks of the trailing form of epidemic disease that has intermittently since 1712 been a part of French rural life, that is known as "la suette des Picards," "la suette du Midi," "la suette miliare," "la fièvre miliare," and the like, and that has been, as already stated, identified with the sweating sickness of the fifteenth and sixteenth centuries (Hirsch; Netter; Foster). It was further noted that many of the local outbreaks of this miliary fever coincided with outbreaks of what was called cholera, but which may not have been due to the comma bacillus. At any rate, the idea was seriously put forward, obtained great currency, and is not yet dead, that true cholera represents a kind of intestinal sweat, and the sweating fevers are a kind of cutaneous cholera. The miliary, or sweating fever, it was suggested, was a "choléra sudoral." It is not necessary to say more: the point has been exhaustively discussed by Hirsch. Nevertheless, after all, the definition by Littré of the trousse-galant as a kind of cholera really leads us back to its relation with the sweating sicknesses and with influenza. For the miliary fever, as I have seen it in French villages, is neither more nor less than endemic-epidemic influenza of the type seen in isolated rural districts, and in "closed" communities such as barracks and industrial schools. The sweating and the rashes are the inevitable accompaniment of a neurotoxic influenza when an unwashed patient is put in a cupboard bed, is smothered in eiderdowns, and is left to stew in the fœtid atmosphere of a one or two-roomed cottage with the windows closed. Certainly, some types of influenza come very easily into the picture even in the absence of such squalid and unwholesome surroundings as those I have indicated, and the blebs of severe "miliary fever" were admirably described by Lord Dawson as seen by him in cases of "influenza" at the Crystal Palace in 1918.

We can, therefore, the more easily understand how it is that, while at Paris in 1918 some cases of influenza were deemed choleraic, in the Midi people

[1] *Lancet*, 1918, ii, p. 595.

spoke of the "miliary fever," a disease which, like influenza, is ometimes despised, sometimes dreaded, and which has even been described by one writer as trivial and by another as a scourge.[1] So the circle closes: a d, had the influenza of the autumn of 1918 been called a "trousse-galant" there would have been historical justification. At any rate, when in 1918 the brave people of the Midi called the influenza "la suette" they spoke with greater wisdom than did many learned men.

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A very Early Illustration of a Disease of the Skin.

By HALDIN DAVIS, F.R.C.S.

AT the present time it is quite unthinkable that any treatise on a dermatological subject should be published without being illustrated. A medical man considering the purchase of such a book, invariably first examines the illustrations, and frequently is guided in his decision to take or leave the volume solely by the opinion which he forms of their excellence or the reverse. But it was not always so. It appears that Robert Willan, the father of modern dermatology, whose classification of skin diseases is the foundation upon which all his successors have built, was also a pioneer in this matter. His treatise on Cutaneous Diseases, published in 1800, was the first volume on the subject furnished with illustrations. This book, which of course is well known, contains thirty-three coloured plates, and many of them, although now faded, are still easily recognizable. In his preface Willan claims the introduction of coloured engravings as an innovation, and he is not unconscious of their limitations. He says:—

"In order to convey distinct ideas on the subject, I have elucidated every genus by coloured engravings representing some of its most striking varieties. This method is new, and will be attended with many advantages, although at the same time subject to several imperfections. Such drawings cannot sufficiently represent the various degrees of opacity and clearness in pustules or vesicles, nor the quantity or quality of the

[1] *La Presse Méd.*, 1918, ii, p. 527.

matter discharged from superficial ulcerations; nor can they extend to every minute circumstance in the course of a disease, being usually taken near its acme. The engravings as auxiliaries to the verbal description will, however, be found useful in exhibiting the number, form, size and colour of papulæ, pustules, tubercles, spots, &c., appearances which cannot always be clearly communicated in words."

It may, therefore, be taken for granted that Willan's great work was the first illustrated book on dermatology. The only other comparatively modern author who wrote on skin diseases slightly before Willan—namely, Plenck—published no illustrations. Illustrations were by no means unknown in medical works and periodicals of the eighteenth century, and indeed of much earlier times. But they were entirely descriptive of figures of instruments, or operations, or dissections, or pathological specimens. I have been unable to find any attempt to portray any eruption on the skin with an approach to verisimilitude. The nearest attempt is found in certain pictures in which some of the figures are

obviously covered with some skin eruption to indicate that they are suffering either from syphilis or perhaps small-pox, but there is no attempt to depict any form of skin eruption so as to indicate its characteristics to the observer.

I have been able to find only one example of an illustration of a skin disease published before the appearance of Willan's work. I cannot lay claim to having made an exhaustive search, but it is certainly true that it was quite a novel idea at that time to make a drawing of any cutaneous eruption.

In the *London Medical Journal* of 1789, vol. x, p. 361, there is published a letter from Mr. Thomas Christie, Member of the Medical and Antiquarian Societies of Edinburgh. The writer was not a doctor, although he had at one time set out to become one, but his studies had in some way or other suffered interruption. The letter is addressed to Dr. Simmons, who communicates it to the Journal, under the title, "Observations on Pemphigus," founded on a case of that disease which had come under his notice. In the course of his remarks, he says, "Cutaneous diseases, though accompanied by eruptions, are as little understood among physicians as any class whatever." (This is a reproach which has been levelled at dermatology even by contemporary critics.) "To put an end to this confusion and uncertainty, it is necessary that physicians should study the natural history of diseases with the same care that botanists study that of plants, or zoologists that of animals. In cutaneous diseases plates ought to be given; for in such cases the most accurate description falls short of a good drawing." In maintenance of his theory, which was well in advance of contemporary practice, he sends with his letter a line engraving of the case, which was published with it. Mr. Powell, Librarian of the Royal Society of Medicine, has made an excellent photograph of the original engraving which is here reproduced. I believe that it is the first case of skin disease of which an accurate illustration has ever been made. The following footnote to the "communication" on p. 367, is as interesting as the actual engraving: "Since I wrote these remarks I have had the pleasure to find that Dr. Willan, an ingenious physician in London, has taken up the same idea respecting the necessity of having drawings made of the appearance of skin diseases which I have so strongly mentioned in this paper. He has, indeed, proceeded a great way in executing this plan, and I hope will soon favour the public with a splendid work on the subject." As this was written in 1789, and the first section of Willan's book was not published until 1800, it will be seen that Willan was at least eleven years at work before he gave his results to the world.

The case so immortalized by Mr. Christie was that of one Hannah Scott, a single woman aged 30 years, the servant of Mr. David Jones, of Little Vine Street, Piccadilly. She was a patient at the Westminster Dispensary from May 17, 1788, to August 8 of the same year, when she came to return thanks for a perfect cure. She was treated by antimonial cathartic, calomel and Glauber's salt, but no mention is made of any external application.

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